Purchasing more secure ICT products and services

EastWest Institute ICT Buyers Guide

https://www.eastwest.ngo/idea/eastwest-institute-launches-cybersecurity-guide-technology-buyers

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AGENDA

Supply chain cybersecurity
Overview of EWI Buyer’s Guide
Path forward
The EastWest Institute (EWI)

An independent NGO that works to reduce international conflict, addressing seemingly intractable problems that threaten world security and stability.

Recognized and trusted for its unique capacity to bring together key policymakers, experts, business leaders and innovators—forging new connections, driving dialogue and introducing sustainable solutions.
### Threats to global supply chains

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Tainted</th>
<th>Counterfeit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Upstream</td>
<td>Downstream</td>
</tr>
<tr>
<td>Malware</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Unauthorized “Parts”</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Unauthorized configuration</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Scrap/Sub-standard Parts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unauthorized Production</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intentional Damage</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

**Confidentiality**  **Integrity**  **Availability**  **Traceability**  **Authenticity**
The supply chain challenge

Assurance best practices need to replace product certification and be applied throughout its lifecycle and supply chain.

Secure in-house development and global supply chains requires:

- A security life cycle approach
- Best practices for all constituents in the supply chain
- Common requirements and international standards backed by assurances
- A public registry to identify trusted providers
- Customers attuned to concerns, so that they reward trusted constituents through procurement
This Buyers Guide is intended to help the buyers, suppliers, and users of information and communications technologies better understand and address the cybersecurity and privacy risks inherent in ICT products and services.

Greatest incentive for providers to raise the bar for cybersecurity assurance, is if it’s required by informed buyers.

Buyers of ICT need risk-based security requirements for their procurements, and to use their collective purchasing power to incentivize raising the security bar.

The Guide provides these three overarching recommendations for ICT buyers and suppliers:

1. Engage in a dialogue about risk management.
2. Use the Guide to frame the dialogue
3. Rely on international standards to increase confidence in the results.
OVERVIEW
Enhancing cybersecurity globally by enabling the availability and use of more secure ICT products and services.

1. ICT buyers should engage in a dialogue about risk management – with like-minded buyers and potential suppliers, and with government and private sector stakeholders.
2. The insights and questions in the Buyers Guide can help frame the dialogue and inform procurement requirements.
3. Whenever possible, reference international standards in setting requirements.

<table>
<thead>
<tr>
<th>Supply side</th>
<th>Demand side</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Promote use of international standards and best practices for product and service integrity</td>
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<tr>
<td>• Facilitate approaches for more informed conversation between suppliers and buyers</td>
<td></td>
</tr>
<tr>
<td>• Foster use of procurement practices based on common requirements, international standards and best practices for secure ICT</td>
<td></td>
</tr>
<tr>
<td>• Work to prevent trade barriers so buyers can identify and utilize trusted providers regardless of locale</td>
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</tbody>
</table>
**PRINCIPLES**
Guiding roles and responsibilities of stakeholders involved

<table>
<thead>
<tr>
<th>Procedures</th>
<th>Actor</th>
<th>Government</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Role</td>
<td>Policy maker</td>
<td>ICT Buyer</td>
</tr>
<tr>
<td>Five Principles</td>
<td></td>
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<td></td>
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<tr>
<td>Maintain an open market that fosters innovation and competition and creates a level playing field for ICT providers</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Create procurement practices that utilize fact-driven, risk-informed, and transparent requirements based on international standards and approaches</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Avoid requirements or behavior that undermines trust in ICT (e.g., by installing back doors)</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Evaluate the practices of ICT providers in terms of creating product and service integrity</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Create and use tools and approaches to address risk and assign high value to cybersecurity investments</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
CORE STRUCTURE

Three essential components of secure procurement

- Enterprise security governance
- Security across product and service lifecycle
- Creating assurance

**Enterprise security governance**
- Strategy and control
- Standards and processes
- Human resources

**Security across product and service lifecycle**
- Design and development
- Build
- Release, fulfillment, and distribution
- Sustainment and response
- Sourcing and supply chain

**Creating assurance**
- Fostering Assurance
  - Laws and Regulations
  - Contracts
  - Transparency
- Demonstrating Assurance
  - Self Attestation
  - External Attestation
APPENDICES:
A critically important part of the guide

- Informing security questions for procurement
- Industry best practice
- Basis of formal procurement or regulatory requirement
- Request for feedback
- International standards
- 100 questions

- Increased ability to operate across markets
- More secure products and services
- Environment that enables innovation
- Is the link with the NIST Cybersecurity Framework clear?
- Are we missing useful standards?
- Should we be adding other questions?
Summary

**Comprehensive risk management:** Organizations should address the risks to their supply chains as part of a comprehensive risk management program.

**Common requirements:** Buyers should recognize most security risks are common and therefore utilize common procurement requirements. Upon risk assessments they should determine their unique delta.

**International standards:** Use of international standards are critical to increasing security of ICT.

**Purchasing power:** Organization should leverage their purchasing power to drive responsible security behavior with their vendors.

**Partner:** Finally, how can we work with ITU to move these principles forward?
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The Open Trusted Technology Provider Standard

- Best Practices for product integrity and supply chain security
- Developed by consensus of the OTTF approved as ISO/IEC 20243 in 2015
- Certification program for formal recognition of ICT providers (e.g., OEMs, hardware and software component suppliers, value-add resellers, etc.) who conform
- Certification program now has two levels
  - third-party assessed (current)
  - self-assessed (available in Dec, official announcement in January)
- Both levels backed by warranty – if found not to be conformant later, certificate removed from public registry – till they fix the problem.
- Customers can decide what level to ask for in procurement based on acceptable risk for their application and operating environment
Relevant International Standards recognized in survey results

• Standards related to Governance and Risk Assessment:
  o ISO 27001 and 27002
  o ISO 27005
  o NIST Cybersecurity Framework (Framework references stds)
  o Open Fair (Risk Analysis Methodology)
• Standards related to Product and Services Life Cycle
  o NIST 800-53
  o NIST 800-161
  o ISO 20243
  o ISO 27034
  o ISO 27036
• Please see Appendix A for list of additional standards
• EWI welcomes suggestions of other standards for inclusion